UNITED STATES PATENT AND TRADEMARK OFFICE

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ERICSSON INC.
6300 LEGACY DRIVE
M/S EVR 1-C-11
PLANO, TX 75024

EXAMINER
ANWAR, MOHAMMAD S

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 September 2009</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-3,5-15 and 17-25</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-3,5-15,17-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office

action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since

this application is eligible for continued examination under 37 CFR 1.114, and the fee

set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has

been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 9/4/09 has

been entered.

Response to Arguments

2.   Applicant's arguments with respect to claims 1-3, 5-15 and 17-25 have been

considered but are moot in view of the new ground(s) of rejection.

In regards to applicant arguments, Kawakami indicates that congestion

notification is only sent to packets which contribute to the congestion. And, The

Kawakami reference sends that notification in a congestion notification packet

(paragraph [0014]). In the present invention, all data in the queue contributes to the

congestion (which is different from Kawasaki where some flows in the buffer do not

contribute to congestion), and the congestion notification information may be found in

queued data units, not some singular packet. Kawasaki filters out congestion notification

procedures for devices that do not contribute to the congestion. The present invention

filters out certain traffic flows that do contribute to the congestion, but which fulfill other

predetermined conditions (the flow is coming to an end or the data flow contains

predetermined signaling identifiers like TCP SYN/RST/FIN. (see newly cited reference Chapman et al.)

In regards to applicant remarks, The Kawakami reference is cited for disclosing the elements and limitations of independent claims 1 and 14. Kawakami is different from the present invention in that Kawakami performs congestion notification based on a condition (par. 33, lines 5-9; par. 80, lines 1-6; par. 78, lines 1-3; par. 24, lines 1-5). The Applicant notes that the cited portions of Kawakami (par. 33, lines 5-9; par. 80, lines 1-6) disclose that the condition that congestion exists is not the condition of when an exception shall be made based on predetermined information. Paragraphs 78 and 24 of the Kawakami reference do not disclose pre-determined conditions, merely the senders to which the notification is sent. Paragraph 24 discloses terminal addresses and paragraph 78 discloses transferring packets only to terminals of a group where data congestion is judged to have occurred (see newly cited reference Chapman et al.)

In regards to applicant remarks, Furthermore, the Kawakami reference sends congestion notification in a congestion notification packet (paragraph [0014]) and the present invention discloses that congestion notification information may be found in queued data units, not some singular type of packet, as in Kawakami (see newly cited reference Chapman et al.).

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1, 3, 5, 7-9, 13-15, 17, 19, 21 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Chapman et al. (U.S. Patent No. 6,922,390 B1).

For claims 1 and 14, Chapman et al. disclose a method of controlling a queue buffer arranged to queue data units received over a communication network (see Figure 3, 208, buffer), comprising: invoking a congestion notification procedure under a predetermined condition, wherein said congestion notification procedure comprises determining whether one or more of said queued data units contains a predetermined congestion notification prevention information (see column 5 lines 34-35, receiver checks for congestion stamp), performing a congestion notification with respect to the one or more queued data units if no queued data units contain said predetermined congestion notification prevention information (see Figure 4, a congestion notification is performed) and preventing a performance of a congestion notification at least with respect to said the one or more queued data units containing said predetermined information and belonging to a same flow as said queued data units (see column 5 lines 35-37, if a congestion is detected , it will pass back the data units without performing congestion notification).

For claims 3 and 15, Chapman et al. disclose wherein if the one or more queued data units contain said predetermined information (see column 5 lines 34-35,

check for congestion stamp), performance of congestion notification with respect to any queued data units is prevented (see column 3 lines 35-38, return to sender without performing congestion notification).

For claims 5 and 17, determining whether a flow of data units is[:] either application limited, coming to an end or one or more data units of the flow of data units fulfills a congestion notification prevention condition (see Figure 4, 408, fill > threshold, a congestion notification prevention condition), and if the flow of data units is application limited, the flow is ending or said one or more data units of said flow fulfills said congestion notification prevention condition, setting the predetermined congestion notification prevention information in at least said one or more data units of said flow (see Figure 4, 410, marking outgoing control packet).

For claims 7 and 19, Chapman et al. disclose wherein said congestion notification prevention condition comprises an indication that the flow of data units is coming to an end (see Figure 5, fill rate indicates flows).

For claims 8 and 20, Chapman et al. disclose wherein said congestion notification prevention condition comprises an indication that flow of data units is application limited (see column 3 lines 25-36).

For claims 9 and 21, Chapman et al. disclose wherein said congestion notification prevention condition comprises an indication that said one or more data units of said flow carry predetermined signaling identifiers (see column 3 lines 35-36).

For claims 13 and 25, Chapman et al. disclose wherein said predetermined congestion notification prevention information is a data unit count-down value that

counts down the number of data units remaining in the flow (see Figure 5, threshold

values for count down for data units).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
        obviousness or nonobviousness.

7.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

8.   Claims 2, 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Chapman et al. (U.S. Patent No. 6,922,390 B1) in view of Sindhu et al. (U.S.

Patent No. 7,359,321 B1).

For claim 2, Chapman et al. disclose all the subject matter but fails to mention

wherein said performing of said congestion notification with respect to a given data unit

comprises one of dropping said given data unit and marking said given data unit with a

congestion notifier. However, SIndhu et al. from a similar field of endeavor disclose

wherein said performing of said congestion notification with respect to a given data unit

comprises one of dropping said given data unit and marking said given data unit with a

congestion notifier (see Figure 11B, column 2 lines 40-47, a process of marking a

packet with congestion notifier or dropping a packet). Thus, it would have been obvious

to one ordinary skill in the art at the time of invention was made to include Sindhu et al.

dropping and marking scheme into Chapman et al. congestion notification scheme. The

method can be implemented in an ECN/drop logic. The motivation of doing this to

provide congestion control (see column 2 lines 40-51).

For claims 12 and 24, Chapman et al. disclose all the subject matter but fails to

mention wherein said predetermined congestion notification prevention information is a

single bit. However, Sindhu et al. from a similar field of endeavor disclose wherein said

predetermined congestion notification prevention information is a single bit (see column

9 lines 6—62, CE bit). Thus, it would have been obvious to one ordinary skill in the art

at the time of invention was made to include Sindhu et al. bit scheme into Chapman et

al. flow control scheme. The method can be implemented in a packet header. The

motivation of doing this to provide congestion control (see column 2 lines 40-51).

9.   Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Chapman et al. in view of Thoo et al. (E.P. No. 0,955,749 A1).

For claims 6 and 18, Chapman et al. disclose all the subject matter but fails to

mention wherein said step of determining whether a congestion notification prevention

condition is fulfilled comprises the analyzing of higher layer information. However, Thoo

et al. from a similar field of endeavor disclose wherein said step of determining whether

a congestion notification prevention condition is fulfilled comprises the analyzing of

higher layer information (see paragraph 78 lines 1-20). Thus, it would have been

obvious to one ordinary skill in the art at the time of an invention was made to include

Thoo et al. analyzing scheme into Chapman et al. flow control scheme. The method can

be implemented in a router or terminal. The motivation of doing this is to control flow

control accurately and achieve high throughput and less congestion (see paragraph 12

lines 1-4).

10.   Claims 10, 11, 22 and 23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Chapman et al. in view of Brothers et al. (U.S. Patent No. 6,822,955).

For claims 10 and 22, Chapman et al. disclose all the subject matter but fails to

mention wherein said data unit sender is part of a proxy server. However, Brothers et al.

from a similar field of endeavor disclose wherein said data unit sender is part of a proxy

server (see Figure 1 (20)). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Brothers et al. proxy server scheme into Chapman et al. congestion control scheme. The method can be implemented in a server or a router or a switch. The motivation of doing this is to use proxy server to establish communication between a device in a first network and a destination device having an arbitrary address on a second network outside of the first network. The method includes the step of generating an address resolution protocol packet to identify the arbitrary address of the destination device (see column 2 lines 5-11).

For claim 11 and 23, Chapman et al. disclose all the subject matter but fails to mention wherein said proxy server is connected to a mobile communication network and arranged for receiving data units from a sending end point outside of said mobile communication network and relaying said data units to a receiving end point connected to said mobile communication network. However, Brothers et al. from a similar field of endeavor disclose wherein said proxy server is connected to a mobile communication network and arranged for receiving data units from a sending end point outside of said mobile communication network and relaying said data units to a receiving end point connected to said mobile communication network (see column 3 lines 52-65). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Brothers et al. proxy server scheme into Chapman et al. flow control scheme. The method can be implemented in a server or router. The motivation of doing this is to use proxy server to establish communication between a device in a first network and a destination device having an arbitrary address on a second network

outside of the first network. The method includes the step of generating an address

resolution protocol packet to identify the arbitrary address of the destination device (see

column 2 lines 5-11).

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to MOHAMMAD ANWAR whose telephone number is

(571)270-5641. The examiner can normally be reached on Monday-Thursday, 9am-

4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Derrick W. Ferris can be reached on 571-272-3123. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MOHAMMAD ANWAR

Examiner
Art Unit 2463

/M. A./
Examiner, Art Unit 2463

/Derrick W Ferris/
Supervisory Patent Examiner, Art Unit 2463